

Seat No. : \_\_\_\_\_

# AK-106

April-2025

BCA, Sem.-IV (NEP-2020)

DSC-C-BCA-241T : Software Engineering

Time : 2 Hours]

[Max. Marks : 50

1. Answer the following :

(1) What is Software Engineering ? Discuss the different layers of software engineering. 5

(2) Discuss: Spiral Model. 5

**OR**

(1) What is an Agile Process ? Discuss Agility principles. 5

(2) Write a note on Adaptive Software Development (ASD). 5

2. Answer the following :

(1) Explain the following software design concepts : Abstraction and Separation of Concerns. 5

(2) Explain Interface Design Elements of design model. 5

**OR**

(1) Explain Data-Centered Architecture and Layered Architecture styles. 5

(2) Discuss : Architecture Trade-off Analysis Method (ATAM). 5

3. Answer the following :

(1) Explain test strategies for webapps. 5

(2) Write a note on stress testing and performance testing. 5

**OR**

(1) Discuss : Basis Path testing 5

(2) Explain: Equivalence partitioning black box testing method. 5

4. Answer the following :

(1) What are the elements of Software Quality Assurance ? 5

(2) What is software reliability ? What are the measures of reliability and availability ? 5

**OR**

(1) Discuss : SQA Tasks. 5

(2) Write a note on Software Safety. 5

5. Answer the following : (any **ten**)

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- (1) Which of the following are activities of a generic process framework for software engineering ?
  - (a) Communication
  - (b) Modeling
  - (c) Planning
  - (d) All of these
- (2) Which of the following is not a phase of waterfall model ?
  - (a) Communication
  - (b) Prototyping
  - (c) Planning
  - (d) Deployment
- (3) Which of the following is a framework activity in XP Process ?
  - (a) Planning
  - (b) Coding
  - (c) Designing
  - (d) All of these
- (4) Pipe and Filters are concept of which architectural style ?
  - (a) Data-Centered
  - (b) Call and Return
  - (c) Data-flow
  - (d) Layered
- (5) \_\_\_\_\_ are the abstract building blocks of an architectural design.
  - (a) Archetypes
  - (b) Component
  - (c) Both (a) and (b)
  - (d) None of these
- (6) \_\_\_\_\_ is a reorganization technique that simplifies the design of a component without changing its function or behaviour.
  - (a) Aspects
  - (b) Refinement
  - (c) Refactoring
  - (d) None of these
- (7) Which testing strategy is directly related to cyclomatic complexity ?
  - (a) Black-box testing
  - (b) Integration testing
  - (c) White-box testing
  - (d) System testing
- (8) Which of the following is a type of system testing ?
  - (a) Recovery testing
  - (b) Black-Box testing
  - (c) White-Box testing
  - (d) None of these
- (9) \_\_\_\_\_ is a test-care design method that exercises the logical conditions contained in a program module.
  - (a) Loop testing
  - (b) Condition testing
  - (c) Data flow testing
  - (d) All of these
- (10) Full form of MTTF is
  - (a) Mean Time To Failure
  - (b) Mean Time To Force Stop
  - (c) Mean Time To Finance
  - (d) None of these
- (11) \_\_\_\_\_ has the responsibility for quality assurance planning, oversight, record keeping, analysis and reporting.
  - (a) Project Manager
  - (b) SQA Group
  - (c) Project Team
  - (d) All of these
- (12) \_\_\_\_\_ Systems are created to help organizations ensure their products quality and services.
  - (a) Quality Assurance
  - (b) Quality Acceptance
  - (c) Quality Control
  - (d) All of these